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AGRICULTURAL DEVELOPMENT AND PROBLEMS IN CHINA TODAY

A Survey of Chinese Communist Agrarian Policies

By

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INTRODUCTION

IN a country like China where more than 80 per cent of some 630 million people live in the rural areas, the importance of agriculture needs no elaboration. In 1957, the approximate value of products from agricultural and subsidiary occupations in terms of 1952 as the constant is estimated at around 60.3 billion *yuan* or 25.6 billion U.S. dollars while the national income for the year 1956 was about 88 billion *yuan* or US $37.36 billion.[1] Although the original allocations in China's First 5-Year Plan (1953-57) gave 40.9 per cent of a total investment goal of 76.64 billion *yuan* (now over-fulfilled) to the industrial sector and only 8 per cent to agriculture, conservation, and forestry,[2] recent reports indicate a greater emphasis is being put on agricultural development. The Second Five-Year Plan (1958-62) places relatively more emphasis on agriculture and its related fields than did the first. This adjustment was already discernible in the economic planning of 1957 in China. While the increase in the values of industrial and agricultural (including subsidiary) production for 1956 over 1955 was, respectively, 31 per cent and 4.9 per cent, the planned increase for 1957 over the preceding year was 4.5 per cent and 4.9 per cent respectively. There would be a 40.78 per cent greater budgetary provision for agriculture in 1958 than 1957 for a total of 2.94 billion *yuan*. Investment in industries directly related to agricultural production would also be increased.[3]

Furthermore, the significance of agricultural development, particularly the production of major food and industrial crops, goes beyond the economic realm—it affects the social transformation process, the health and the morale of the populace. For instance, the rural education programme on the mainland is principally supported by income from agricultural surtax. Economically, of course, the Chinese planners rely chiefly on domestic resources for capital accumulation and economic development, and the rate of growth depends to a great extent, directly and indirectly, on the quantity and quality of agricultural products. Available evidence seems to indicate that the major difficulties at present in giving effect to the ambitious overall plans of China lie more in the agrarian than in the industrial field. For example, due to the lagging behind of certain agricultural raw material production in 1956-57, several important light industries in China operated at partial capacity in 1957. The reported actual utilization in terms of full capacity in some industries was: 85 per cent in the textile industry; 66 per cent in the sugar industry; 75 per cent in the oil extracting industry; 52 per cent in the cigarette industry; 68 per cent in the flour industry; and 69 per cent in the leather industry.[4]

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[1] Yang Po, 'Some interpretations on the ratio between consumption and accumulation in the national income,' *Hsueh-hsi* (Study, *HH*), No. 20, 18 October 1957, p. 24. The average annual rate of increase in the national income between 1952 and 1956 is reported to be around 10 per cent.

[2] *First 5-Year Plan,* Peking, p. 22. Peking's rate for one *yuan* in terms of US dollars is $0.4246.

[3] *New York Times* (*NYT*), 23 August 1957, p. 2.

However, before discussing agricultural development in China, a preliminary question—'How reliable are the Chinese statistics?'—should be dealt with.

The answer depends mainly on the definition of 'reliability.' If 'reliability' means the exact reflection of all the minute conditions in the rural development of China, then the answer must be in the negative. Like the data of many other countries, especially those where qualified statistical workers are few and most peasants unfamiliar with forms or tabulations, errors and/or omissions are unavoidable. If by reliability one means that agricultural data released by the Chinese Government reflect the general conditions or trends in Chinese agriculture without any deliberate falsification, then the answer, in the opinion of many specialists on contemporary China, is affirmative. Another important point is that there has been steady improvement in the method and accuracy of official data on various economic aspects of China, particularly after 1954. They are certainly more accurate and representative than statistics compiled during the pre-Communist era, partly because of the more efficient organization at the grass roots in China today, and partly because of the greater attention paid to statistical work by the Communist Government.

Another point which needs to be clarified at the beginning of this paper concerns the different contexts of the same term 'liang-shih' or foodgrain: ordinarily, when a discussion concerns the total quantity of grain production the term *liang-shih* (sometimes also called *yuan-liang*) denotes harvested, but unprocessed, grain. But when *liang-shih* is used in connexion with grain being sold at the market or food stores, it means processed grain—and an average loss of some 14 per cent occurs when grain is processed, according to Chinese sources. When the same term (*liang-shih*) is used to represent grain paid as tax, it means neither unprocessed grain nor processed or market grain. Instead, it means *hsi-liang* (fine grain), because it consists mainly of principal crops like rice and wheat; official sources indicate that there is a difference of about 10 per cent between *yuan-liang* and *hsi-liang*.

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[4] Yang Po, op. cit., p. 25.

The complexity of the term *liang-shih* goes even further. The figures on foodgrains published on the Chinese mainland cannot, without proper adjustment, be used for comparison with the production figures of foodgrains of pre-Communist years, primarily for two reasons: First, *liang-shih*, as used by the Communist statisticians, does not cover a group of grains identical with that of the Nationalist period. Irish potatoes are included in current statistics as grains, but were not in the pre-Communist data. Peanuts are now classified officially as oil-bearing crops, while they were previously regarded as 'grains'. Since 1956, soya beans have been taken out of the 'foodgrain' category and listed as an economic crop. Second, and more important, Chinese statisticians now 'convert' potatoes into foodgrains at the rate of four to one, that is, four tons of potatoes are counted as one ton of foodgrains. No conversion rate was employed in computing the weight of potatoes during the Nationalist period. As the annual production of sweet potatoes during the 1930's was around 25 million tons, a 75 per cent reduction in potato tonnage would lower pre-war foodgrain production figures by at least 10 per cent. Those who overlook these factors in an attempt to make comparative studies of the levels of grain production between the pre-1949 and post-1949 periods are further confusing an already complicated picture.

ORGANIZED FARMING

A number of transitional forms of organized farming such as the mutual aid teams and the lower-stage agricultural producers' cooperatives (APCs) where land ownership is privately retained by the individual peasants were promoted by the Communist Government in its effort to transform the traditional agricultural system of China (see Tables I and II). However, since the acceleration of collectivization (or higher-stage APCs) touched off by Mao Tse-tung's now famous speech of 31 July 1955, Chinese agriculture has been on the whole collectivized. By the end of 1956, more than 96 per cent of the 125 million peasant households had joined APCs. Among the 756,000 APCs, 540,000, with 88 per cent of the total peasant households were classified as higher-stage APCs or collective farms. Less than 5 per cent of the total value of agricultural production in 1956 had come from individual farms.[5] In view of these developments, this paper will concentrate on the impact and problems of collective farming in China. However, it must be pointed out that the gradual, step-by-step approach of Peking in reorganizing the traditional form of farming, while permitting voluntary participation and withdrawal even after collectivization, plays a significant role in mitigating the disrupting effects, both physical and psychological, during the transformation. It is true that various forms of pressure exist for the Chinese peasants to join or remain in the APCs; but this legally stipulated principle of 'voluntariness' does help to reduce the tension among the peasantry during the collectivization movement. Furthermore, the rich peasant group was never strong in rural China, and a tradition of many rudimentary forms of mutual aid among the Chinese villagers helped the promotion of co-operative farming.

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[5] See Statistical Bureau, *Communique on the Implementation of the national economic plans in* 1956, 1 August 1957; and Li Fu-chun, 'Report on the achievements of the 1st 5-Year Plan', *Te-kung Pao*, Hongkong, 8 December 1957.

It is too early to render conclusive evaluations of the complex effects of collectivization on agriculture as well as on the peasants in China, but the issue is too vital to be bypassed. One mainland Chinese report states that 'according to investigations in many areas, about 80 per cent of the APCs in 1956 reported increased output over 1955, and 75 per cent of the co-operative members received greater incomes than the previous year.'[6] Development of the APCs also resulted in greater utilization of rural labour power. The average number of work-days for a Chinese full-time agricultural worker was estimated at 172 a year in Dr. Buck's surveys conducted in the 1920's. The average number of work-days for an able-bodied male in the APCs in Shansi province in 1956 was around 250 days(and a woman labourer, 120 days).[7] Although we do not know whether the definitions of these terms employed in the above statistics are identical or whether the national average work-days for the APCs in 1956 was much lower than 250, available evidence indicates that labour utilization in the APCs is more intensive. This in turn facilitates the expansion of subsidiary occupations to supplement income from cultivation and the undertaking of large-scale projects such as conservation work. A survey of 26,935 APCs in 1955 yields similar results. As these reports do not indicate whether the APCs surveyed are representative of the regional differences in grain production levels, or to what extent government aid to the APCs contributed to their better showing, further details are needed. From the economic and technical viewpoints, there are reasons to support the premise that organized farming, if carried out with the co-operation of the peasants, will help to resolve a number of problems in Chinese agriculture such as the minute parcellization of cultivated land, inefficient use of farm implements, draft animals, and manpower, lack of funds or labour to undertake long-range projects such as large-scale irrigation, and the shortage of farm hands during busy seasons.

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[6] Ho Wei, 'Consolidate further the Socialist front in rural areas,' *Cheng-chih hsueh-hsi* (Political Study), No. 8, 13 August 1957.

[7] See Ishikawa Shigera, 'Effects on productivity of collectivization in China,' *Keizai kenkyu* (Economic Research), Tokyo, 8.4, October 1957, pp. 371-376; also Mu Yu, 'The superiority of the higherstage APCs,' *Hsueh-hsi* (Study, *HH*), No. 3, 3 February 1957, p. 20.

However, a number of operational or technical matters must be considered in evaluating the impact of collectivization on agricultural production in China. These practical issues, which can often be both complex and urgent for the specific APCs involved, may include the following: What is the most desirable size for APCs in a certain rural area? How should the remuneration for each APC member be calculated accurately according to the quantity and quality of his work? What is the proper method of compensation for land and other properties brought into the APC by the members? What are the suitable proportions of income to be distributed and to be reserved as sinking funds? How to train a sufficient number of managerial, accounting and technical personnel to meet the expanding needs of the APC? How is the best division of labour to be realized, and the productive power of APC members maximized but not over-taxed? What agro-technical improvements are to be carried out, and when? How to develop additional sources of income to meet the growing need of operating funds?

A number of measures contained in three directives on the APCs issued in September 1957 by the Central Committee of the Chinese Communist Party aim at tackling many of these questions. One directive dated 15 September 1957 called on the APCs to establish co-ordinated management and control, clear division of labour, and the drawing up of concrete quota assignments for production as well as fiscal workers. Another directive said that village handicraftsmen and pedlars now in the APCs should be allowed to form supply and marketing teams or handicraft production groups in order to utilize their skills. The directive of 14 September 1957 also shows an awareness of possible shortcomings in over-sized APCs.

Regarding another major source of complications in the APCs—the insufficiency of trained personnel for managerial or technical work, a very significant move was made by Peking in 1957. This directed school graduates who could not enter an institution of a higher level to work in the rural areas. In December 1957, it was reported that 3,080,000 students in 21 (out of 26) provinces and municipalities had joined agricultural production work.[8] As more and more 'educated peasants' come into existence, the far-reaching impact of such a movement on the agro-technical as well as social transformation of the Chinese villages cannot be over-estimated. Still another problem involves the quality of many of the functionaries in the APCs. Some were too rigid or impatient in their effort to popularize collective farming. Some even became corrupt by their new powers over hundreds of rural households. To cope with this situation, a directive of CC, CCP of 14 September 1957 emphasized that all APC members should have the right to freely criticize the shortcomings and errors of the cadres at general sessions of members or meetings of production teams. The increasing influx of students into the rural districts will also help to improve the qualitative aspects of the leadership in the APCs. Whether the progress in organizational reforms of the APCs will keep pace with the requirements of the ambitious agricultural programmes of China the immediate years ahead (say, 1958-62) will show.

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[8] *Hua-ch'iao jih-pao* (China Daily *HCJP*), 17 September 1957, p. 3.

AGRICULTURAL PRODUCTION AND PRODUCTIVITY

The development in the past 8 years of major food and economic crops, livestock, and certain subsidiary produce in China is summarized in Tables III to VI. The achievements, particularly in the cases of rice, wheat, and cotton, have been quite impressive. For example, the production of rice increased from an estimated 48.6 million tons in 1949 to 71 million tons in 1952 and 82.7 million tons in 1956; that of wheat, from 13.8 million tons to 18 million tons and 24.8 million tons during the same period; that of cotton, from 444,000 tons in 1949 to 1.3 million tons in 1952 and 1.64 million tons in 1957. This accomplishment is even more striking when one takes into consideration the fact that in 1949 grain production was reportedly only 74.6 per cent of the pre-war average, cotton around 52 per cent, and livestock and farm tools were depleted by 16 per cent and 30 per cent, respectively.[9]

Increasing agricultural production has always been regarded as a central task by Peking, and greater weight is being assigned to it because of the need for more agricultural products to meet the rapid pace of industrialization. Li Fu-chun, Chairman of the State Planning Commission, stated in his report on the achievements of the First 5-Year Plan on 7 December 1957: 'Agriculture, compared to the fast-growing industry and in view of the needs of the people's livelihood and national construction, has fallen behind.'[10] The various measures adopted by the Peking Government to develop agricultural production may be grouped into four general categories: First, those which contribute to the expansion of crop acreage—conservation, reclamation, and encouragement of multiple cropping practices. Second, those which aid the enhancement of yield per hectare—irrigation, afforestation, water and soil conservation, use of better seeds, application of more fertilizers, new farm implements, and technical training of peasants. The cultivation of the better-yielding crops, like corn and potatoes, also helps to increase the yield per unit of land. Third, organizational measures like the establishment of co-operative and collective farms, which are designed to raise labour efficiency, and the reform of marketing systems. Fourth, means to help reduce crop losses and waste, including the control of plant or animal pests, better storage facilities, and a host of other methods to practise greater economy in the use of agricultural produce.

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[9] Li Shu-cheng, *Great Achievement in the Agricultural Production of New China in the Past Three Years,* 18 September 1952.

[10] Li Fu-chun, op. cit.

Details of the various programmes in the first three categories will be discussed in separate sections of this paper. The fourth category, often underestimated or neglected by Western observers, plays an important role in China's agricultural production programme. For example, the percentage of extraction loss in the processing of coarse grain into retail grain in the pre-war period was estimated to be more than 20 per cent,[11] while the current rate is said to be about 14 per cent. The number of feasts for festival or other celebrations has been cut down drastically, and wine-making—which in the pre-Communist era is said to have consumed 11.5 per cent of all the rice and wheat produced in 1946[12]—has also been curtailed. Various substitutes have been introduced to replace grain as animal feed. The campaign to exterminate rats and sparrows (initiated in 1955) is another effort to save foodgrains. An official of the Ministry of Grains wrote in August 1955 that 470,000 rats were killed between January and May 1955, and an estimated 7,000 tons of grain was saved.[13] One *New China News Agency* bulletin, dated 1 December 1956, reported that 'to minimize waste, many APCs in Shensi are rethreshing their wheat ears, and it is estimated that an additional 33,000 tons of wheat will be obtained throughout the province.[14] When such cases are multiplied on a nation-wide scale, the effect must be considerable.

Another qualitative standard in evaluating agricultural production in mainland China is crop productivity (yield per unit of land). Again progress is more pronounced in the three major crops of rice, wheat, and cotton. Their productivity (pound per acre) in the years 1949, 1952 and 1956 is as follows: Rice, 1,688, 2,147, and 2,204; Wheat, 573, 651 and 810; and Cotton 143, 208 and 240 (1957). However, a number of crops, including soya beans, potatoes, jute kenaf, and sugar beet, are unlikely to reach the planned productivity at the end of the First 5-Year Plan—that is, in 1957 (see Tables III and IV). The qualitative aspects of agricultural products may also include the utilization value of a particular crop, such as the sugar content of sugar beet and the fibre quality of cotton, and the food value (calorie content as well as preferential value in local food habits)of different grains. The quality of sugar beet, for example, deteriorated in certain areas(like Heilungkiang)in 1956, and adversely affected sugar production.

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[11] Hua Shun-nien, *On the Control of Foodgrains*, Taipei, 1953, p. 112.

[12] Hua Shun-nien, op. cit., p. 170.

[13] *Jen-min Jih-pao* (People's Daily, *JMJP*), 9 August 1955, p. 2.

[14] BBC, 'Summary of World Broadcasts', Part V, *Economic Supplement* No. 247, 3 January 1957, p. 8.

There is, in addition, the problem of balanced development among the various sectors of agriculture—especially among the three major areas of foodgrains, industrial crops, and subsidiary occupations. Up to 1956, the attention of Communist planners was focused on the increase in production in food crops and cotton. As a result, a number of other crops and side jobs did not get adequate emphasis. Measures have been taken since 1956 to rectify the situation, but it will take time to fully develop some important subsidiary products. The amount of tea produced in 1957, for instance, was only 70 per cent of the pre-war level, and that of domestic cocoons, less than half.[15] This may partly be due to the extensive natural calamities which occurred in 1956, when an estimated 38.33 million acres of cultivated land was affected in varying degrees and 12 million tons of grains lost.[16]

It is risky to predict the exact line of development in agricultural production in China due to a variety of reasons, such as the uncontrollable weather factor and the experimental nature of many of China's agrarian programmes. However, barring the unlikely event of a world conflagration, steady growth on China's agricultural front may be expected—due primarily to the following factors: First official planners are assigning greater weight to agricultural investment and to industries closely related to agricultural production. Second many agro-technical improvements, like conservation, irrigation, afforestation, and the employment of more chemical fertilizers, will begin to take cumulative effect. Third, rural reorganizational measures like the redistribution of land and collectivization of farms have been completed without serious disruption of the rural economy. Fourth, a series of non-economic programmes like the despatching of students into villages, mass education, and rural health measures will exercise a positive influence in developing agricultural production. But, if the goal of foodgrain production at the end of the Second Five-Year Plan (240 million tons, according to a speech of Li-Fu-chun of 8 December 1957) is to be fulfilled in 1962, the rate of increase in the coming few years must be higher than that of 1957—a mere 1.5 per cent over 1956. Cotton production, however, overfulfilled the 1957 target, without notably expanding the acreage. Other relevant factors which may substantially affect agricultural production, like rural taxation, pricing policy for farm products, and marketing control, will be discussed in the following section.

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[15] Statistical Bureau, *Implementation of the national economic plans in* 1956, op. cit., and *Hua-ch'iao jih-pao* (China Daily News), 13 November 1957, p. 1.

[16] *Liang-shih* (Foodgrain), monthly, Peking, No. 7, July 1957.

PROGRAMMES ON RURAL FINANCE AND MARKET CONTROL

The reported developments in China's programmes on rural credit, cultural tax, and the Government control of farm products are summarized in Table VII.

Between 1950 and 1956, more than 7 billion *yuan* was made available to the peasant households as loans, 3.3 billion of which was extended in 1956. These credits certainly helped agricultural production, especially when the prices of daily necessities were kept basically stable during the same period. The problem now is not so much to increase the volume of rural credit as to make the loans available to those who need them in time, to have the means of production as well as daily necessities ready when the peasants receive the credit, and to see that the loans are used for productive purposes as for as possible. The purchasing power of the villagers is also affected by the prices of agricultural products purchased by the Government. One report stated that between 1950 and 1955, state purchase prices were increased by 15.7 per cent for grains and 15 to 45 per cent for hemp, silk, cocoon, tea, oilseeds and cotton.[17] In 1956, the state purchasing price for agricultural products was raised by an average of another 3 per cent. The volume of government purchases for some raw material in 1956 as compared to the previous year is as follows: vegetable oil, 85 per cent; cotton, 88 per cent; wool, 78 per cent; jute, 102 per cent; and cured tobacco, 113 per cent.[18] The total value of agricultural and subsidiary products purchased by the government through the supply and sale co-operatives in 1956 (not including the products bought directly by the Ministry of Agricultural Products) came to 2.9 billion *yuan*.[19] This illustrates the key role played by these co-operatives in rural finance. At the same time, the precentage of retail volume for the necessities sold in 1956 as compared to 1955 was as follows: vegetable oil, 116; pork 97; sugar, 119; cigarettes, 103; cotton cloth, 134; rubber shoes, 152; fountain pens, 140; bicycles, 143; radios, 159; kerosene oil, 118; and charcoal, 126.[20] Shortage in certain goods, like edible oil and pork, was reported both in 1956 and 1957. In 1957, prices for a number of commodities like vegetables, rapeseed, sesame, handicraft products, hogs, and vegetable oil, were raised generally in favour of the agricultural sector. One of the contributing factors for the pork shortage in 1956 was the unreasonably low government purchase price.

Pricing is used by Communists not only as a lever to influence the production of a particular produce but also to facilitate government control of major agricultural products. The State Council issued on 24 October 1956 a directive on the correct implementation of the policy on easing control of the rural market, which supported the gradual relaxation of the control of subsidiary agricultural products. Among the items which still remained under government control were foodgrains, cotton, oil-bearing plants, cured tobacco, jute, ramie, hemp, sugarcane, silk cocoons, tea, hogs, sheep wool, cattle hide, hand-made paper, hand-made sugar, scrap tin, scrap lead and several kinds of herb medicines, apples and oranges for export, and marine products from the major fishing areas for commercial sale. The Ministry for Purchase of Agricultural Supplies issued a directive on 25 August 1956 which deals with the question of using the buying of agricultural products as an instrument to boost their production. This document pointed out, among other things, that agricultural by-products and side occupations should be expanded and APCs should be encouraged to engage in semi-procession and short-distance transportation of many agricultural products.

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[17] Government of India, *Report of the Indian (Agricultural) Delegation to China, 1956*, p. 76.

[18] Statistical Bureau, *Communique on the implementation of the national economic plans in 1956*, op. cit.

[19] Data Section, *Tung-chi kung-tso* (Statistical Work, TCKT), No. 14, 29 July 1957, p. 12.

[20] *Communique on the implementation of the national economic plan in 1956*, op. cit.

The most important part in the state control of agricultural products, of course, is the government purchase and supply of foodgrains. The policy was initiated in November 1953, and developed in March 1955 into the 'three-fix' programme, that is, the fixing of production, purchase and sale of foodgrains. The estimated total quantity of grain received by the government through tax in kind and compulsory purchases between 1950-51 and 1956-57 was approximately 26 million tons and 40 million tons respectively. The highest amount of grain collected by the government was in 1954—more than 51 million tons. Premier Chou En-lai in his report on the recommendations regarding the Second 5-Year Plan in 16 September 1956 remarked that in 1954, 'because of our failure to understand clearly the grain output situation in the country, we purchased a little more grain from the peasants, thus causing the resentment of some of the peasants.'

Due to regional variations and incomplete data, it is difficult to give a categorical answer to the question whether everyone has enough grain to eat in China today. Mainland Chinese sources give the amount of unprocessed foodgrain available on a per capita basis (for both human and other consumption) as: 1949-50, 477 *chin* (one chin equals 1.1 pound); 1950-51, 483; 1951-52, 523; 1952-53, 577; 1953-54, 574; 1955-56 608 and 1956-57, 630.[21] According to one Chinese author, out of the per capita amount of 630 *chin*, 35 *chin* will be for seeds and 65 *chin* for livestock feed. This leaves a balance of 530 *chin* or 583 pounds available for human consumption, which the author considers as sufficient.[22] The amount of grain to be purchased for 1957-58 was reported to be less than that of 1956-57, and the export of grain was reduced from 1.32 million tons in 1956 to 0.78 millon tons in 1957.[23] Although it is difficult at present to evaluate the accuracy of the above figures because so many variables are involved (like transportation, greater consumption of grain due to more intensive labour utilization in collective farming etc.), several points may be usefully noted: First, the actual per capita consumption of foodgrain in urban China is probably larger than that of rural China, due to a combination of factors such as the greater need for non-human consumption of grain and inferior marketing facilities in the rural districts. Second, with an annual increase of some 13 million persons and increasing urbanization (population in urban areas increased by 10 million in 1957) the annual increase of grain production, in order to noticeably improve the supply, must be considerably more than the 2.5 million tons reported for 1957. Thus, at least before the harvest of 1958, the food situation in China is likely to be tight. Third, the sufficiency of foodgrain in China does not depend solely on the amount of grain produced. Storage facilities, the amount of spoilage and waste, efficiency in transportation and distribution of grains, timely relief for famine areas, and absence of hoarding or speculation all affect substantially the actual quantity of foodgrain that can be made available to the consumers. There are grounds to believe that improvements have been made in all these directions in present-day China, in comparison with the Nationalist period.

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[21] Su Hsiu-lin, 'Is there enough grain for the people to eat this year?' *Shih-shih shou-tse'e* (Handbook on current affairs), No. 20, 25, October 1956; also Liang Chu-hang, 'Grain distribution in 1957 and 1958,' *Liang-shih* (Foodgrain), No. 6, June 1957.

The effect of improved administrative efficiency on agriculture may be seen in the following example. In 1931, floods in the Huai River inundated over 7 million acres in Kiangsu and Anhwei provinces and killed 45,000 people. In 1954, the flood was greater but it inundated only 233,400 acres in Kiangsu and a smaller area in Anhwei, and resulted in the death of 2,800 persons. In 1956, the flood was almost the same as that of 1931, but the inundated area was much smaller and, even more significant, no one lost his life.[24] Fourth, to substantially enhance food supply to the people, additional sources of food other than grains must be effectively exploited. These may include greater use of non-starch foods like marine products and the speedier development of poultry farming and livestock raising.

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[22] Liang Chu-hang, *ibid.*

[23] Po I-po, *Report on the implementation of the* 1956 *economic plan and draft plan for* 1957, 4 July 1957.

[24] *NCNA*, Interview of Wang Chu-lieh, Acting Chief Engineer of the Huai River Water Conservancy Board, BBC, *Summary of World Broadcasts*, Part V, 1 August 1957, p. 14, and *HCJP*, 24 August 1957, p. 3.

The amount of foodgrains available to the rural populace depends a great deal on the rate of agricultural tax, which is generally in kind. This form of involuntary saving is also instrumental in the accumulation of capital in the agricultural sector. The salient features in the present agricultural tax system may be seen in Table IX. A maximum of 22 per cent of the regular tax was reintroduced as surtax in 1956. This feature, together with the current non-uniformity of the tax rates in different regions, may be temporary. Peking is likely to revise and unify tax regulations on a proportional scale without surtaxes, in view of the basic changes which occurred in the countryside after collectivization. Collective farming with group activities, incidentally, makes it much more difficult for farmers to downgrade either the cultivated acreage or the output. The land of the APC member is also appraised when it is taken in as his share of contribution to the common fund.

The weight of agricultural tax in the national receipts decreased from 17 per cent in 1952 to slightly more than 10 per cent in 1957—in monetary terms, 2.6 billion *yuan* and 2.94 billion *yuan*.[25] Although the importance of agricultural tax yields in the national economy has relatively decreased since 1949, they still constitute a major component especially when indirect burdens of the peasantry are taken into the picture. A Japanese economist estimates the percentage of the total burden of the agricultural sector (including direct agricultural levies, bond sales, and indirect tax burdens, which in 1955 are said to have been double the direct agricultural tax) in the annual budgetary income of China as follows: 1950, 51; 1951, 44, 1952, 37; 1953, 41; 1954, 40; and 1955, 41.[26] One Chinese author gives the average percentage of total agricultural tax (including surtaxes) to the actual output of agriculture (including food and industrial crops) for the past few years as follows: 1950, 12.29; 1951, 14.5; 1952, 13.2; 1953, 11.98; 1954, 12.47; 1955, 11.67.[27] One mainland Chinese source made a comparison of the tax burdens of the peasants between the years 1952 and 1956 as follows:[28]

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[25] Li Hsien-nien, *Report on the budget for* 1956 *and* 1957, 29 June 1957; 50 million *yuan* were later deducted from the original estimates of 2.99 billion *yuan* as estimated agricultural tax receipts in 1957.

[26] Ishikawa Shigeru, 'The burden of agricultural sector in the socialist accumulation of China,' *Keizai Kenkyu* (Economic Research), 8.1, January 1957, p. 74.

[27] Hsiao Ku, 'A Preliminary study of agricultural tax in the next two years,' *Tsai Cheng* (Finance), No. 3, 5 December 1956.

[28] Li Shu-teh, 'Peasants' burdens in 1956: conditions and problems,' *Ts'ai-cheng* (Finance), No. 8, August 1957. The net value of agricultural and subsidiary production does not include the proceeds of self-supporting handicraft industry and primary processing industry for agricultural produce. The public reserve fund for the expansion of reproduction totalling 290 million *yuan* in 1956 is not included in the peasants' income.

	1952	1956	Percentage change (8952=100)
1. Net value of agricultural and subsidiary production (billion *yuan*)	32.276	38.416	119.0
2. Total of the peasants' tax burdens (billion *yuan*) ..	3.38	3.266	96.6
3. Percentage of peasants' tax burdens in net value of production..	10.50	8.5	..
4. Total of the peasants' income (billion *yuan*) ..	28.896	34.86	120.6
5. Agricultural population (million persons) ..	491.91	532.20	108.2
9. Average per capita income (*yuan*)	58.7	65.5	11.6

A survey of 26,935 APCs reported in early 1956 that agricultural tax took away, on the average, 12.8 per cent of the total grain production.[29] The amount of national bonds subscribed by the peasants in 1956 was reported in a speech by Ma Yin-ch'u on 3 July 1957 as 138 million *yuan*.[30]

The rates in agricultural taxation are not the only thing to be considered in evaluating the tax system in rural China. Other issues may include: The method of collection, the quality of the tax administration, local deviations, the relative price level of manufactured goods (the scissors' differentials), the amount of capital input channelled back into the agricultural sector, the purpose for which the collected tax is used, and the numerous non-economic factors. For example, the current burdens on the rural sector may still be heavy, but the capital thus involuntarily accumulated is devoted to general economic development of the nation, which in turn benefits the peasants as well. Both the efficiency and honesty of the tax administration have, on the whole, improved in comparison with the pre-Communist era. As one Western scholar observes: 'the tax now collected goes to the national or local treasuries and is not embezzled in part or at all by the tax collectors (as it was during the Kuomintang period)'.[31] The scissors' differentials, according to Peking Statistical Bureau tabulations, decreased by 18 per cent from 1950 and 1955. It is calculated that between 1951 and 1956, as a result of the adjustments in scissors' differentials, peasants were benefited by more than 11 billion *yuan*.[32]

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[29] Statistical Bureau releases, *Hsin-hua pan-yueh-kan* (New China Monthly, *HPYK*), No. 24, 21 December 1956, pp. 63-65. The quantity of grain sold to the state was about 19.3 per cent of the total amount produced.

[30] Ma Yin-ch'u, 'A New approach to population,' *HPYK*, No. 15, 10 August 1957, p. 40.

[31] Charles P. Fitzgerald, *Revolution in China*, 1952, pp. 177-8.

[32] Chang Ho-jan, 'Are the burdens of the peasants too heavy,' *HH*, No. 16, 18 August 1957, p. 16.

One Chinese author wrote in August 1957 that for the coming few years the total amount of foodgrains to be collected (as tax) and purchased each year would be stabilized at 80 billion plus *chin* (approximately 42.5 billion tons).[33] Since the quantity of grains the Chinese peasants have to surrender to the government is unlikely to decrease while the population increases at the rate of 2.2 per cent per annum, whether the consumption of grain in China may be enhanced will depend greatly on the increase of agricultural production. The reorganization of Chinese agriculture is now completed basically and as reclamation of waste land is time-consuming, costly, and not unlimited, the key factor in agricultural production seems to lie in the direction of agro-technical improvements which are decisive in raising farm productivity as well as efficiency.

AGRO-TECHNICAL PROGRAMMES

The term agro-technical is used here to describe a myriad of biological and technical measures. These include conservation, irrigation, reclamation, afforestation, the use of better seeds, more efficient application of fertilizers, anti-pest controls and modern farm implements, and plans to develop technical training and research. They also include the dissemination of traditional farming knowledge and practices which have proved effective in specific rural areas of China but have not been popularized in other regions where conditions are favourable. The development in the agro-technical fields reported in mainland China for the past eight years are summarized in Table VIII.

Emphasizing the importance of agro-technical measures does not mean other non-technical programmes are unimportant or the former can be isolated from the latter. As one Western scholar points out: the line of demarcation between technical and economic and, for that matter, social progress is necessarily arbitrary. Better tools and equipment and improved methods of cultivation are both the cause and effect of higher standards of living and advances in literacy and public hygiene. The combined effect of all three types of change is cumulative, each tending to reinforce the other.[34]

It is significant to note that when Vice-Premier Li Fu-chun delivered a speech on the results of the First 5-Year Plan on 7 December 1957, among the eight topics listed by him to promote agricultural development, all except the first (on greater investment in agriculture) deal with agro-technical programmes. These programmes will be discussed briefly.

Conservation and Irrigation

At all the major rivers and their tributaries in China, systematic water and soil conservation work has either begun or will start soon. For example, the Sanmen Gorge Project was started in April 1957, marking the first step of a comprehensive 15-year plan. It is estimated that when the first phase is completed in 1967 more than five million acres of land will be added to irrigation, 21 million acres of land will get improved irrigation, and an additional 2.73 million tons of grains produced.[35] Similar programmes are being started on the Yangtze, Pearl River, Heilungkiang, and Liaoho.[36] Preliminary conservation works have been completed at the Huai River, and Haiho (including the Yungting River near Peking) in 1957. Between October 1955 and September 1956 alone, more than 610,000 channels and dykes, 2.6 million reservoirs, and 4.5 million wells were built.[37] As a result, over 35 million acres of irrigated land was added during the First Plan (1953-57), about three times more than the original planned goal. The 1958 plan, according to Vice-Premier Teng Tzu-hui, called for an additional 6.7 million acres of irrigated land and improvement for over 7 million acres of land already irrigated.[38] The proportion of irrigated acreage expanded from 16.3 per cent in the total cultivated area (or 72 million acres) in 1949 to 30.5 per cent (or 86.7 million acres) in 1957.[39] Equally important is the fact that the number of conservancy engineers and technicians jumped from 5,360 in 1950 to 31,280 in 1956. While there were only a small number of students in conservation studies prior to 1949, about 1,800 annually have graduated from university conservancy departments and 1,000 from technical institutes or schools in China in the past several years.[40]

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[33] *Ibid.*

[34] Solomon Adler, *The Chinese Economy*, 1957, p. 139.

The progress is impressive and labour-intensive projects like conservancy and irrigation suit the particular characteristic of Chinese agriculture at present—abundance of manpower and inadequacy in capital and advanced technology. However, there exist also a few problems in the conservation programmes in China. Sometimes the conservation plans are too ambitious or drawn with incomplete understanding of local conditions and needs. For example, the plans for the Haiho basin involve four reservoirs with a total capacity of 7.5 billion cubic metres, requiring an investment of 360 million yuan. But the average volume of flow of the Piho basin on the main supper stream of the Haiho for quite a number of years in the past has been only 3.1

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[35] See Teng Tzu-hui, *Report on the Multiple-Purpose Plan for Controlling the Yellow River*, 18 July 1955; Foreign Language Press, Peking, 1955, pp. 42-44.

[36] See 'Red China Plans to Tame Yangtze,' NYT, 24, November 1957, p. 22.

[37] Fu Tso-yi, 'Evaluation of conservation work in 1956 and plan policies and tasks in 1957,' *Chung-kuo shui-li* (Conservation of China), No. 5, 14, May 1957.

[38] *HCJP*, 13 September 1957, p. 1.

[39] Fu Tso-yi, 'Report on the achievements in conservation,' *HCJP*, 5 October 1957, p. 3.

[40] Fu Tso-yi, op. cit. *HCJP*, 5 October 1957, p. 2.

billion cubic metres.[41] Greater attention needs to be paid to the qualitative and technical aspects of the projects. It helped agricultural production when more than 5 million wells were dug between 1950 and 1956 (3 million in 1956), but hundreds of thousands of wells were imperfectly built. Also, it is desirable to accord greater encouragement to small-scale and medium irrigation projects which may be undertaken mainly with local resources. Better co-ordination is desirable between conservation or irrigation and other programmes like afforestation, soil improvement, and the accumulation of river mud as manure. The success of conservancy work depends partly on whether they are timely—for example, in winter and spring before the floods develop and when the peasants are not too busy.[42] The managerial ability and technical competence of the leaders who guide the conservation work constitutes, just as in many other agro-technical programmes, a key element for success.

Reclamation and Afforestation

Mainland Chinese sources estimate the total of 'reclaimable land' at some 266 million acres,[43] slightly less than the 280 million acres of cultivated area in 1956. Even if half of this arable land is reclaimed, it would contribute substantially to the agricultural production of China. However, as Prof. Ma Yin-ch'u pointed out in a speech on 3 July 1957, 'among the "waste land" some is barren, some lacks water, and some is grass land needed by minority groups.'[44] During the First Plan (1953-57), the original goal of land reclamation of some 6.3 million acres was over-fulfilled by 200 per cent, although the per capita land holding of the nation remained about the same (2.73 *mou* in 1953 against 2.66 *mou* in 1957) due to population growth. It is true that the labour-intensive nature of reclamation projects which require little capital or advanced technology make advantageous use of the abundant manpower of China. But reclamation cannot be regarded as a panacea to the need for greater crop production in China, both due to the cost factor (estimated as 40 to 50 *yuan* per *mou* or averaging US $115 per acre) and the limited amount of good arable land. Even when opening up readily accessible 'waste land' for reclamation, extreme care is needed to study the soil conservation situation in a particular locality. Significantly, both in the revised programme for agricultural development during 1956-67 and Li Fu-ch'un's report on the direction of construction in the Second Plan (1958-62) of 7 December 1957, reclamation is listed as the last item in some 10 measures designed to enhance agricultural production. The utilization of hilly lands for the cultivation of non-food crops like tea, tung trees, bamboo and mulberry deserves attention. The amount of land to be reclaimed by the state farms in the 12 years following 1956 is set at around 14.5 million acres.

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[41] 'Brief discussion on the comprehensive utilization of our river basins,' *JMJP*, Editorial, 5 September 1957, p. 1.

[42] See, CC, CP and State Council, 'Decision to launch a campaign for building irrigation projects and accumulating manure in coming winter and next spring,' *Kuang-ming jih-pao* (Brilliance Daily), 25 September 1957.

[43] *Shih-shih shou-ts'e* (Current Events Handbook), 10 September 1955.

[44] Ma Yin-ch'u, op. cit.

There are other labour-intensive programmes in agriculture which stand much less chance of having unfavourable side effects. Afforestation is one of these. According to an *NCNA* report of 25 September 1957, trees had been planted on a total area of 25 million acres in the First Plan—which is 71 per cent above the original target. This is 33 times the aggregate figure of afforestation during the 35 years before 1949. Five thousand forestation centres have been set up, including 400 state-owned tree farms. Equally important is the training of more than 14,000 specialists and technicians in forestry during the same period—as compared with 3,000 trained between 1927 and 1949. The afforested area on the Chinese mainland, as of July 1957, was larger than that of India, and said to rank fifth in the world after the USSR, Indonesia, U.S.A. and Canada.[45] There seems little doubt that tremendous strides have been made in 'making China green.'

Qualitatively, there is room for improvement in the afforestation programme in China. During 1955 and 1956, the rate of survival of trees planted was only 60 per cent. In the spring of 1957, about 80 per cent of saplings planted 'came up to the quality standards stipulated by the government.' According to a statement by Dr. Liang Hsi, Minister of Forestry, in June 1956, the goal was to plant trees on 250 million acres of barren land and mountains between 1956 and 1967. The 12-year plan for the development of agriculture (1956-67), however, does not specify any figure for afforestation. It only calls for the planting of trees in all possible localities, collectively by the APCs and individually by co-operative members. Except in the case of state forests, the income and ownership of these trees planted belong to the APC or individual peasants, as the case may be.

Statistics (see Table VIII) indicate that both reclamation and afforestation programmes showed rapid development in 1956 and 1957. One reason is attributed to the popularization of co-operative and collective farming, which resulted in better organization as well as utilization of manpower in rural China. According to Liao Lu-yen, 13 million acres would be added to China's farm land through the elimination of boundaries and unnecessary paths between fields as a result of organized farming.

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[45] *NCNA*, Peking, 12 July and 25 September 1957.

Fertilizers

Chinese peasants are traditionally skilful utilizers of fertilizers—mainly in the form of human as well as animal manure and other forms of 'natural' fertilizers like soya bean cakes, green manure, bone meal (made of animal bones) and river mud. This is one of the reasons why after thousands of years of intensive farming, the productivity of the Chinese farms remains high. Peking's directives on agricultural production have repeatedly called for greater effort in the collection and more efficient use of these 'natural' fertilizers, as they still constitute the bulk of the fertilizers used on Chinese farm lands.

The various forms of traditional fertilizers have proved their utility by history. But what is more urgently needed is greater quantities of chemical fertilizers. It has been estimated that, on an average, the application of one ton of chemical fertilizer would result in the increase of five tons of grain.[46] Another writer estimated in an article in *Ta-kung pao* of 27 October 1957 that the use of one catty (1.1 pound) of ammonium sulphate would help to increase the production of any of the various crops as follows (in catties) : rice, 3.6; wheat, 2.5; cotton, 0.93; and rapeseed, 1.75.[47] Although the use of chemical fertilizers in mainland China increased from 300,000 tons in 1952 to 1.6 million tons in 1956 (see Table VIII; the peak pre-war figure was 400,000 tons in 1933), the average amount of chemical fertilizer applied to each *mou* during 1954-55 was only two catties—compared to 120 catties for Japan and 66 catties for England.[48] One estimate puts the total amount of chemical fertilizer required for the farms in China at 15 million tons a year.[49]

Chemical fertilizer, if properly applied, can achieve impressive and immediate results in crop yield. It does not require too great an investment in capital or technical skill, nor advanced technology in application or maintenance. The manufacture of more chemical fertilizers and careful studies for their effective application deserve top priority in the development programme of China. Recent reports from mainland China indicate that greater attention is being paid to the increase of production in chemical fertilizers—which will reach five to seven million tons in 1962, and is planned to jump to 15 million tons in 1967, the end of the Third Five-Year Plan.[50] A contract was scheduled to be signed between China and some Japanese manufacturers in January 1958, which provided for the export of 400,000 tons of ammonium sulphate and 20,000 tons of superphosphate of lime to China.[51] Another important source of fertilizer is animal manure, especially hog manure, which also deserves serious attention. The excrement from one hog can, according to a recent estimate, fertilize from two to three *mou* of farm land. The current plan aims at increasing the number of hogs from 120 million in 1957 to 250 million in 1962.[52]

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[46] Chang Chen, *The Chemical Industry in the First Five-Year Plan*, Peking, 1956, p. 18.

[47] Wu Chien-sheng, 'The Chemical Industry of Our Nation,' *Ta-kung pao*, 27 October 1957, p. 3.

[48] *Ibid.*

[49] T. H. Shen, *Agricultural Resources of China*, 1951, p. 38.

[50] *Hua-ch'iao pih-pao* (China Daily News), New York, 18 December 1957, p. 1,

Modern Farm Implements

Many of the traditional types of farm tools in rural China are crude and inefficient. Also as a result of war between 1937 and 1949, a lot of farm implements were either destroyed or damaged. From 1955 to 1957, over three million pieces of new-type wheel plows were distributed among the Chinese peasants. However, the danger of too ambitious a programme for modern farm tools is seen in the reduction of the planned goal of five million double-wheel, double-blade ploughs for 1956 to one and a half million pieces (actual number sold). This points to the need for more thorough research on the practical conditions and needs regarding farm implements in the various rural regions in China.

A programme for more modern farm tools certainly includes tractors and combines, especially after the basic completion of collectivization after 1956. The Soviet Union, for example, imported about 5,000 tractors between 1924 and 1925 alone. Within a decade, she was importing 23,000 tractors a year, plus using 10,000 tractors produced domestically each year.[53] The total number of tractors in all China in 1956 was only 9,600. It has been estimated that about 52 per cent of the current 280 million acres of cultivated land in China is in the plains, thus able to utilize machinery in varying degrees.[54] This does not mean, however, that these lands cultivable by machinery will soon be using tractors. On the contrary, it would be utopian to expect spectacular results in mechanizing China's agriculture for the following reasons: First, it takes time to develop a modern farm machinery industry. The first tractor factory now under construction in China, scheduled to be completed in 1959, will have an annual production capacity of 15,000 Tat-54 type tractors equivalent to 36,000 tractors of standard type with 15-horse power; 400,000 Tat-54 tractors would be needed to plow 167 million acres of cultivated land. Second, even leaving aside the question of cost of buying tractors from abroad, there still remains the question of fuel supply. On an average, 10 tons of diesel oil a year would be required for one tractor of the Tat-54 type or one million tons for 100,000 such tractors. But the total amount of crude oil produced in China in 1957 was around 1.5 million tons. Third, there are the additional problems of training the technical personnel necessary to operate and to maintain these machines.[55]

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[51] *New York Times*, 31 December 1957. (Ammonium sulphate was sold at a reported price of US $50.24 per ton; and superphosphate of lime at US $35.60 per ton. *Christian Science Monitor*, 4 January 1958).

[52] *Hsin-hua pan-yueh-Kan* (New China semi-monthly), No. 24, 25 December 1957, pp. 83-85.

[53] Maurice Dobb, *Soviet Economic Development Since* 1917, 1948, p. 213.

[54] Chao Hsueh, 'The problem of agricultural mechanization in China', *Ch'i-hua ching-chi* Planned Economy, (*CHCC*), No. 4, 9 April 1957,

In view of the above, the argument that full mechanization must accompany organized farming in China seems to be an impractical one. Before industrialization is advanced sufficiently to create considerable numbers of job opportunities in secondary and tertiary occupations, a heavy displacement of farm labour by machinery will drastically worsen the employment situation in the Chinese countryside. Also according to Soviet experience, when chain-type tractors are used on a farm with an area of about 5.5 acres (or 200 metres by 100 metres), the utilization rate is only 64 per cent; but when run on 250 acres (or 2,000 metres by 500 metres), the utilization rate reaches 85 per cent.[56] These considerations may have been in the mind of Liao Lu-yen when he, in a speech on 26 January 1956, envisaged the eventual use of 1.2 million to 1.5 million tractors (15-horse power) with an annual replacement rate of 10 per cent but realistically set no time limit for such a goal.

Other Agro-technical Programmes

Peking is vigorously promoting a number of other agro-technical programmes which cannot be discussed fully here. These include the adoption of better cultivating methods, extension of multiple cropping areas, the popularization of advanced and tested farm experiences, the planting of high-yielding crops like corn and potatoes, pest control, the use of improved strains of seed, and the development of scientific and technical training as well as research in agronomy. Peking's efforts in these fields are partly reflected in the data shown in Tables III, IV and VIII. For instance, the index for double-cropping acreage increased from 100 in 1952 to 108.7 in 1956. The planted area and production for potatoes increased, respectively, 57 per cent and 122 per cent between 1949 and 1956. The use of insecticides jumped from 90,000 tons in 1955 to 159,000 tons in 1956.

The key areas which need greater attention at the moment seem to lie in the promotion of better seeds and agro-scientific research. Improved seeds were reported to have been sown in 80 per cent of cotton fields but only in 40 per cent of foodgrain areas in 1957. In view of the non-fulfilment of the goals in the increase of yield per acre except for a few crops like wheat and cotton during the First Plan, there is obvious room for improvement in the development of better crop strains. One Western agronomist estimated that improved strains of seeds alone could raise crop yields between 15 and 30 per cent in China.[57] In popularizing good seeds, the particular conditions and needs of different localities must be taken into consideration.

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[55] For more discussion of these issues, see Chao Hsueh, op. cit.

[56] Quoted in Chao Hsueh, op. cit.

One factor basic to all agro-technical improvements is scientific and technical training and research. According to a report by Ting Ying, President of the Academy of Agricultural Science in Peking, made at the founding day of the academy on 1 March 1957, good progress has been achieved in the following fields of research: the control of locusts, the breeding of one improved strain of rice and another of wheat, which give a 10 to 20 per cent higher yield, prevention of damage by cotton borers, treatment of certain livestock diseases, the manufacture of fertilizer from peanut or soya bean nodules, and the planting of fruit trees on hilly lands.[58] But such research takes time to produce effects, and at present, research in agro-science still seems to lag behind actual need. The need for outstanding achievement in fundamental agro-technical studies is indicated by the fact that, out of 34 scientific awards granted by the Academia Sinica at Peking in 1956, only one was made in the field of agricultural science, and that one was a third-class award given to a veterinarian for his work on a cattle disease.[59] In the past few years, there has seemed to be a tendency on the part of many administrative leaders in China to emphasize agro-technical research projects which would yield quick results. Recent reports from mainland China, however, indicate that there has been an increasing awareness of the importance of fundamental research in agro-science. In early 1957, in Szechuan province alone, more than one million peasant agro-technicians joined the production effort.[60] The almost unlimited potentialities of such research may be seen in the California Institute of Technology's report on the world's food situation, issued in May 1956. The possibilities of producing entirely new edible crops or making synthesized foods or drastically reducing the production time and cost of certain food crops are becoming greater every day,[61] and successful exploits in these fields will open up unheard of horizons in the world's food supply in particular and in rural economic development in general. The total number of scientific research personnel (including teachers) in the field of agro-technology was estimated as 11,000 in early 1957, of whom 1,340 were senior researchers.[62] The number of personnel available for agro-technical work in the rural areas must be considerably increased after the arrival of several million students and government functionaries in the villages after the autumn of 1957.

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[57] Gerald Winfield, *China, the Land and the People*, 1948, p. 290.

[58] *HCJP*, 20 March 1957, p. 3.

[59] For details on the awards, see *HCJP*, 14 February 1957, p. 3.

[60] *JMJP*, 7 April 1957.

[61] On this fascinating report by Dr. James F. Bonner of the California Institute of Technology, see *New York Times*, 21 May 1956, p. 19.

SALIENT PROBLEMS IN CURRENT AGRICULTURAL DEVELOPMENT

As China's agrarian programmes are multi-functional and the issues involved extremely complex, the problems discussed here have to be selective. Also a number of specific points such as the operational problems faced by the APCs and the need for more agro-technicians have been brought up previously and will not be repeated in this section.

Greater Co-ordination and Accuracy in Planning

Government control in all major economic sectors of China is comprehensive and the statistical data available to the Peking planners at least in the early stage were meagre and disorganized. The situation is further complicated by the over-ambitiousness as well as inexperience of many local cadres. Thus an editorial of the *People's Daily* of 1 May 1957 pointed out 'there are many irrational constructions and waste during the First 5-Year Plan' due to 'subjectivism, doctrinairism, formalism, and lack of experience.'

Recent reports in China seem to indicate that there is need for greater co-ordination and balance between the agricultural and industrial sectors, as well as among the three major components of China's agriculture—food crops, industrial crops, and subsidiary products. For example, cigarette factories in China operated at 30 per cent of capacity in 1954 due to the shortage of tobacco supplies. In 1955, there was a shortage of cotton and only 76 per cent of the textile machinery was utilized. There was a bumper crop of cotton in 1957 (1.64 million tons) but the production of oil-bearing crops and soya beans fell short of the goal. Up to 1956, subsidiary occupations in many rural districts declined. In the report on the Second Plan, Premier Chou En-lai pointed out on 18 September 1956 that this factor (the neglect of side agricultural products) added to the low prices set for some subsidiary produce had hampered the overall and full development of the agricultural economy, thus affecting the expansion of the entire economy as well as the peasants' income. A directive issued by the Ministry of Agriculture on 8 September 1957 reiterated the 'need for rational allocation of proportionate acreages for different agricultural crops.' Up to 1957, the gradual contraction of cotton sowing acreage was described as 'the most striking gap in the ratios between food crop and cotton cultivation.'[63] But the planted area of cotton was stabilized in 1957 and 1958—at about 15 million acres, and the record yield of cotton in 1957 must have resulted from enhanced per-acre production.

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[62] *BBC*, 'Summary of World Broadcasts,' Part V, *Economic Supplement*, No. 247, 3 January 1947, p. 3.

[63] *JMJP*, editorial, 7 September 1957.

In the particular area of planning for agricultural crops for various areas, several technical problems have been revealed in a recent article published in early 1957. The author pointed out that it was true that before setting down the minimum target figures (for agricultural crops) the state had solicited the views of local areas. However, these views were generally submitted during the period from July to September—too early in many areas to make accurate crop estimations. The time gap between such reports and the actual planning, during which changes in natural conditions might occur, also affect the accuracy of the target figures.[64] The author recommended that planned grain production could be changed to planned purchase, and the state should not control the acreage, but only issue the co-operatives target figures relating to grain to be taxed and purchased. The state would, before the issue of these production goals, compile regional production plans for internal reference of provincial cadres. This is a general reflection of a need for greater flexibility in the heavily centralized control of agricultural programmes. In a speech on China's economic plans for 1958 by Po I-po in August 1957 he also reported on the plan to encourage smaller local enterprises. The planning chief remarked that 'greater emphasis would be put on the co-ordination of large, medium and small enterprises and fuller use of smaller industrial undertakings and handicrafts.'[65] Subsequently, the State Council issued three directives in November 1957, reassigning a number of industrial and commercial projects to local authorities, including greater power for regional administrations on foodgrains, forestry, and communications.[66]

To avoid a one-sided picture, it may be pointed out that the achievements in the agricultural sector in China during the First Plan have been great—especially in view of the fact that the resources available to the Peking planners at the beginning were very limited, and in numerous areas a trial and error approach was unavoidable. It is perhaps also unavoidable that the growth in the agricultural sector during the initial planning years was uneven or in spurts, as agricultural production is still subject to unpredictable influences. Nevertheless, economic development will be smoother and less costly if the degree of zigzagging in agricultural (or industrial) growth is made less sharp. Helpful means in this respect may include more realistic planning, provision of safeguards or cushions against certain eventualities like natural calamities, and the securing of greater capital either by expanding trade or getting additional credit abroad.

[64] Yeh Chun, Chekiang Provincial Dept. of Agriculture, 'An Inquiry into a change for the agricultural planning system in China,' *HCC*, No. 2, Febuary 1957, pp. 14-16.

[65] *NYT*, 12 August 1957, p. 2.

[66] Chinese texts in *HPYK*, No. 24, 25 December 1957, pp. 59-62.

Improving the Welfare of the Peasants

It is both difficult and complex to evaluate the welfare standard of the Chinese peasant on the mainland during the past eight years for a number of reasons. The first and obvious hindrance is the inability to ascertain exact conditions in each village among some 200,000 *hsiang* in China. Second is the fact that there are considerable regional variations due to differences in natural endowment of various localities and the unpredictable changes in the forces of nature. Third, the needs of human beings are such that the 'welfare' of a peasant must not exclude such intangible considerations as his or her educational opportunities, social status, and mental outlook on life and regarding the future. Fourth, no matter how 'objective' an analyst tries to be, he is limited by his background and his own values. The actual urgent needs of a villager in China may not coincide with what an intellectual thinks are the former's priority wants—especially when the latter has had no intimate contact with the rural community of China in recent years, where many basic changes have occurred.

Nevertheless, the question of the welfare of the peasantry in China today is too vital to be bypassed—it is one of the essential criteria to judge the agrarian policies of the Chinese Government. First we shall look at the material side of the picture. According to mainland Chinese sources, the purchasing power in rural China increased from 8.1 billion *yuan* in 1950 to 19.1 billion *yuan* in 1956.[67] The prices of daily necessities remained basically stable between 1953 and 1956.[68] In 1957, there was a slight increase in prices, but the government purchasing prices for agricultural products were raised more than those of manufactured goods. As a result, it was estimated that the peasants would get an additional income of 560 million *yuan* in 1957 through upward adjustments in the prices of rural produce, and a net balance of 150 million *yuan* after deducting expenditures from higher prices for needed manufactured items.[69] According to data released by the Ministry of Commerce in August 1957, the total value of 51 major commodities supplied by the Ministry in 1956 increased by 66.7 per cent over 1952. Specifically, watches increased more than 2.5 times; thermos bottles, charcoal, paper, fountain pens, and sewing machines more than doubled; sugar, 80.9 per cent; cotton cloth, 77.3 per cent; and rubber shoes, 60.6 per cent. In the same period of five years, the number of bicycles sold exceeded 24.23 million. In 1950, 14 Chinese peasants shared one bolt of cotton cloth, but the same amount of cloth was shared by only 5 peasants in 1956. In 1953, the average annual expenditure on Western drugs by each peasant was 0.79 *yuan*, but increased to 1.37 *yuan* in 1956.[70] Light industry in 1957 was estimated to supply the country with 79 per cent more consumers' goods than in 1952, among them textile fabrics, 33 per cent more; processed foods, 100 per cent more; and daily necessity articles, 81 per cent more.[71] According to statistical data gathered from 15 provinces (Hopeh, Liaoning, Heilungkiang, Shensi, Tsinhai, Shantung, Kiangsu, Anhwei, Chekiang, Yunan, Inner Mongolian Autonomous Region, and the three cities of Peking, Tientsin and Shanghai) and made public in July 1957, the conditions of food supplies in the rural areas were as follows: grain-surplus households, 53.852 million (half were lower middle or poor peasants) or 62.36 per cent; self-sufficient households, 8.316 million or 9.63 per cent; grain-short households, 24.187 or 28.01 per cent (among them 15.911 million were poor peasants).[72] Up to October 1957, the total worth of saving deposits in rural China reached 1,190 million *yuan*.[73]

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[67] *HCJP*, 29 October 1957, p. 1.

[68] The retail price index of industrial products in rural areas, taking 1952 as 100, is as follows: 1953, 98.5; 1954, 100.2; 1955, 101.4; 1956, 100.4; and 1957 (est.) 100.4. The purchasing price index of farm products for the above respective years (also with 1952 as 100) is 110.1; 113.8; 113.2; 116.6 and (for 1957 estimates), 120.9. See Li Sen, 'Develop among the peasants another convincing and active campaign of socialist education,' *Cheng-chih hsueh-hsi* (Political Study), No. 8, 13 August 1957.

[69] 'Domestic market prices in the first quarter of 1957,' *TCKT*, No. 11, 14 June 1957.

Between 1950 and 1956 the government of mainland China spent 3.07 billion *yuan* for basic construction in conservation, 1.31 billion *yuan* for relief, and 1.28 billion *yuan* for agro-technical improvements. This sum of 5.66 billion *yuan* constituted about 30 per cent of the total of all taxes paid by the Chinese peasants in these 7 years—amounting to 18.6 billion *yuan*. In 1957, 68.4 per cent of the tax receipts from the peasants was scheduled to be used for agricultural development—not including investment in rural education, medical service, and transportation.[74]

The above statistics, even if accurate, do not mean that peasants in every village in China are leading an abundant life. Isolated cases of destitution or even starvation in several localities have been reported in the mainland Chinese Press. Also primarily due to the high rate of involuntary saving in the agricultural sector to support industrialization during the First Plan, the per capita increase in purchasing power among the peasantry was small: estimated from about 70 *yuan* in 1950 to 78 *yuan* in 1956.[75] But, as previously pointed out, the welfare of the Chinese villagers cannot and must not be separated from other non-economic factors such as the new social status enjoyed by the peasant men and women; a honest and effective administrative leadership; greater chances for education; internal peace and stability of the country; improved sanitary as well as medical conditions; and better cultural or recreational facilities. For example, more than 67 million children went to primary schools in 1957, an increase of 16 million over 1952 and the number of hospital beds at the *hsien* (or country) level exceeded 100,000 at the end of 1956. To an illiterate Chinese peasant who never had any chance to enjoy modern medical treatment, the availability of educational and medical facilities for himself and his family may mean just as much as having an additional yard of cloth. The welfare of the peasantry in China is certainly closely related to the general economic development in the country. This may include the growth in heavy and light industries, better marketing facilities, easier credit, expansion of export of produce, stability of commodity prices, and crop or livestock insurance by the government. Furthermore, consumption is more equally distributed among the people in China now instead of concentrated in a few million members of the privileged class. Thus conspicuous consumption such as that enjoyed by the rich in cities like pre-war Shanghai is seldom in evidence.

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[70] *HCJP*, 13 August 1957, p. 1. The per capita rate has been adjusted in accordance with population increases.

[71] NCNA, Peking, 29 September 1957.

[72] Chou Po-p'ing, 'The policy of unified purchase and sale of grain shall not be frustrated,' *Liang-shih* (Foodgrain), No. 7, July 1957.

[73] *HCJP*, 28 December 1957, p. 3.

[74] Chang Hao-jan, 'Are the peasants' burdens really heavy?' *HH*, No. 16, 18 August 1957, pp. 16-17.

[75] Chang Hao-jan, op. cit., p. 17.

The Population Growth

The welfare of the peasants is related, too, to the rate of population growth in China. At the present rate of increase, estimated at 2.2 per per cent per annum, the present population of China (641 million in 1957) may approach the entire world population of 2.63 billion in 50 years or so. That a rapid growth in the number of mouths to be fed complicates the problem of raising the peasants' standard of living as well as other economic programmes needs no elaboration. Premier Chou En-lai himself remarked to the Indian Agricultural Delegation on 17 August 1956 that the mere fact that the rate of increase of agricultural production (at 4 to 5 per cent per annum) was outstripping the current rate of growth in population did not mean that population could continue to expand without any limit.[76] Since 1956, Peking has taken various measures to promote planned parenthood, and birth control methods have been widely popularized in all leading publications in mainland China. The colonization programme of the sparsely populated areas in China like Heilungkiang and Sinkiang was greatly accelerated, and between 1955 and 1957 more than 700,000 people were reportedly settled each year in the areas in Northwest and Northeast China.[77] But as the annual increase of population is between 13 and 15 million, the seriousness of the issue remains.

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[76] *Report of the Indian Delegation*, op. cit., p. 22. Also see Li Teh-ch'uan, 'Birth control and planned families,' *JMJP*, 9 March 1957; and Ma Yin-ch'u, 'A new approach to the population problem,' op. cit.

[77] *NYT*, 16 December 1957, p. 5.

At the same time those observers who maintain that no economic progress in China is feasible unless population growth is checked take a one-sided view. Many factors caused economic stagnation or deterioration in traditional China which had little to do with population pressure —such as irrational land systems and ineffective administrative leadership. Furthermore, population is a relative matter, depending on the level of production of a particular country. For example, at the end of 1956 the per capita holding of arable land in Belgium was about half an acre and that of the Belgian Congo 9 acres, or 18 times as much.[78] The per capita holding of cultivated acreage in India (1955) was about 0.85, which is 170 per cent of that of Belgium. But there is no question which among the three areas is the richest or which has a greater population problem. This illustrates the fact that population pressure in a particular country or area depends on the degree of resource utilization. And from a long-range viewpoint, there seems to be no reason for pessimism in the development of food supplies for the world. As Dr. Robert Brittain wrote in 1952: 'Human beings have reached a stage of technical development where they can produce from the available resources not merely subsistence, but abundance.'[79] This view is supported by recent scientific progress and by many leading scientists. Dr. James F. Bonner of the California Institute of Technology presented a fascinating paper in May 1956 on the possibilities of producing entirely new edible crops or making synthesized foods or drastically reducing the production time as well as cost of certain food crops. Among the possible new sources of food described in his report are: a meat beet or a fat plant, the cultivation of algae, chemical synthesis of essential meat proteins, and the conversion of woody stalks and leaves to edible sugar. The last three experiments had already been successfully tried at that time.[80] The rapid advancement in the peaceful application of nuclear energy and other forms of fuel have brought within human reach, through the supply of cheap, abundant power, the conversion of regions on the earth previously regarded as 'useless' into direct or indirect sources of food supplies.

However, these new scientific-technical exploitations in food resources and China's industrialization which will siphon off surplus labourers from the rural areas will take time to realize. In the meantime, the additional employment created in China estimated at 1.3 million annually during the First Plan was only one-third of the number of individuals who were reaching the labour age of 16 each year in China during the same period.[81] This population increase, plus fast urbanization under the accelerated process of industrialization, has resulted in migration from villages to cities and the growth of non-productive groups in urban centres. For example, while there were only five cities with a population of one million or more in China in 1950, the number had grown to 13 in August 1957.[82] During 1953 to 1957, it was estimated that 8 million people had found their way into the cities from rural China. At the same time, the agricultural labour force, estimated at 260 million in 1957, will reach 280 million by 1962.[83]

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[78] Calculated from data in 1958 *Information Please Almanac*, pp. 565-57 and p. 788.

[79] Robert Brittain, *Let There Be Bread*, 1952, p. 223.

[80] *NYT*, 21 May 1956, p. 19.

In view of the above, effective measures are obviously called for to meet the challenging situation. A number of counter-moves have been undertaken in mainland China. They include the creation of more productive jobs in cities, greater use of human labour in certain enterprises, prevention of 'blind migration' of peasants into the cities, transferring of urban residents into the villages and the reclamation of more waste land. All these will help to alleviate the problem, but do not seem enough to totally resolve the problem. And by 1967, it is estimated that 7 million persons will reach the working age of 16 each year.

The realistic means of offering extensive, immediate relief seems to lie in the creation of more opportunities for productive work in the rural areas themselves—until long-range programmes such as birth-control and industrialization can take effect. There are a number of possible ways by which the additional labour power in rural China may be profitably utilized. These may include: (1) The development of both old and new subsidiary occupations such as local industries, handicrafts, breeding of domestic animals, orchard or vegetable cultivation and the undertaking of side jobs like tea planting, raising silk cocoons, and fishing. (2) The expansion of labour-intensive projects such as building or irrigation or conservancy works, road construction, reclamation of waste land, afforestation, and construction of means of transportation like junks, carts, and wagons. (3) More intensive cultivation and the increase of multiple cropping, in order to raise the production per unit of land. (4) A more rational division of labour so that the villagers may achieve higher efficiency and productivity, while concomitantly more facilities for social and cultural activities can be enjoyed by the villagers. These programmes, all being promoted in varying degrees in China, may entail a crowded schedule for the peasants, but strenuous work is required for speedy development of an under-developed economy. The common people of China have always been hard workers; with definite objectives under an effective leadership they now have something to struggle for, and the improvements already achieved serve as incentives.

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[81] *HH*, early September 1957, quoted in *NYT*, 15 September 1957, p. 28.

[82] *NYT*, 10 August 1957, p. 3.

[83] Wang Kuang-wei, 'How to organize agricultural labour power,' *CHCC*, No. 8, 9 August 1957.

To find additional job opportunities and to foster new occupations in an already crowded rural area have complications and problems. But the development of organized farming, which pools capital as well as manpower and makes systematic planning possible, could help to promote numerous activities in the rural areas which cannot be undertaken by individual farmers. There are an estimated 260 million persons in terms of full labour power in rural China in 1957, and on the average one acre of cultivated land reportedly would need 108 working days a year to care for it. Calculating on this basis, tending the 280 million cultivated acres (1957) would take 30.24 billion working days. When we add 2.24 billion working days for keeping domestic animals (calculated on the basis of roughly 8 working days per head a year for 280 million domestic animals in 1957), the total comes to 32.44 billion working days. Out of the agricultural labour power of 260 million persons in 1957, approximately 43 per cent of it may have to be spent on household labour and non-agricultural labour such as marketing or road building and at least 7 per cent for subsidiary occupations,[84] and the balance would be around 130 million persons. According to the revised programme on agricultural development from 1956 to 1967 announced on 25 October 1957, the minimum goal for an agricultural labourer is set at 250 days a year. The 130 million labour force should accomplish 32.50 billion working days a year. Thus if the target of working days per (full-time) agricultural worker is realized, theoretically, there would be a surplus of a quarter of a million in rural China as of the year 1957. With the expansion of multiple cropping, livestock raising, and rural side occupations, much more would be required in the agricultural sector in the days to come. One estimate maintains that, in 1962, there will be a shortage of 2.1 billion working days. This is calculated on the following basis: total labour power will increase to 280 million, yielding 70 billion working days (at 250 days a year). The number of working days (in billion days) required for various categories of work will be as follows: farming, 31.5; household and non-agricultural labour, 30; side occupations, 5; livestock raising, 3.6; and capital construction work (like conservation projects), 2—totalling 72.1 (billion working days).[85]

The above tabulations are, of course, rough estimations, and the specific conditions in different areas in China may vary a great deal. However, these figures do offer a general basis for viewing the question of population growth *versus* the greater utilization of agricultural labour through the development of rural economic activities. It is not impossible to afford effective relief to the population pressure through the expansion of additional work opportunities in rural China. With the decentralization of industries since 1956, it is also possible to find employment for peasants in newly established local industries. After the completion of two or three five-year plans, the capacity of secondary and tertiary occupations to absorb labour from the agricultural sector will be multiplied.

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[84] Based on estimates of Wang Kuang-wei, op. cit.

[85] Ibid.

The problem of population is not limited to the quantitative side of growth. There are also problems concerning the structural aspects of China's population such as regional distribution, occupational divisions, internal as well as external migration, age break-downs, and sex composition. These complex issues cannot be discussed here, partly due to the unavailability of detailed information.

Natural Calamities

Another major problem concerns the prevention or control of natural disasters. The scope of damage caused by natural calamities like flood, drought and water-logging from 1953 to 1956 was reported in a Peking journal as follows:[86]

Year	Area affected million (acres)	Loss in grain production (million tons)	No. of persons affected (million)
1953	15.83	7.5	34.35
1954	30.25	8.85	62.23
1955	19.03	6.35	36.22
1956	38.33	12.20	74.34
1931 (flood alone)	26.30	..	52.70

These statistics indicate that a great deal remains to be done in the prevention of natural disasters in China. The long-range programmes like afforestation and conservation, which are being vigorously pushed by the Chinese Government, require time to take effect. It is also relevant to point out here that without these water and soil conservation efforts, the damage from natural disasters would be much greater. The effective organizational work in flood prevention and famine relief help to reduce the seriousness of the situation. For example, in the unprecedented floods of 1956, only a small number of people lost their lives, while in 1931 'about a quarter of a million persons died during the floods.'[87] When the upper reaches of the Yi and Shu rivers in Shantung reached the heaviest flow in the history of that province in 1957, 550 lives were lost. According to a correspondent of *The New York Times* (24 July 1957), 62,000 pounds of cooked food was dropped by planes to the victims in three days. Equally important is the fact that thousands of tons of seeds for autumn crops were distributed by the Internal Affairs Ministry to peasants in the disaster areas so that production would not be interrupted.

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[86] *Liang-shih* (Foodgrains, Monthly), No. 7, July 1957.

[87] Kai-ming Ch'iu, 'Agriculture,' *China*, ed. by MacNair, 1946, p. 470.

There are also provisions for the reduction or exemption of agricultural tax for peasant households which suffer from natural calamities. The scales of exemptions as stipulated in the Regulations of August 1952 are as follows: percentage of crop lost 60 or more, tax exemption, 100 per cent; 50-60 per cent losses, 70 per cent exemption; 40-50 per cent, 50 per cent; 30-40 per cent, 35 per cent; 20-30 per cent, 25 per cent; and 20 per cent or less, no exemption. The effective mobilization of local inhabitants in the case of flood or drought resulted in successfully coping with the threat in many instances. For example, Wuhan in 1955 and Harbin in 1957 were threatened by the worst floods in the past 100 years, but both these cities were made safe by an all-out effort by the local people and the government. By contrast, Wuhan and its vicinity were inundated for several months in 1931, when the water crest of the Yangtze River at a lower height than that of 1955 hit the metropolis.

There are naturally many other problems existing in the agriculture of China, such as the need for better grain storage facilities, the development of new crop bases (e.g., cotton plantation in Sinkiang), the slow recovery of certain subsidiary occupations like silk cocoon and tea production, and the desirability of expanding additional food resources other than grain crops. But these cannot be discussed here.

CONCLUDING COMMENTS

Regarding the agricultural programmes and problems in China today, the 'safe' way would be to leave the conclusions to the readers themselves, especially regarding future prospects. This is so not only because the issues are extremely complex and data incomprehensive. It is also because the interpretation of available data is influenced by one's values or beliefs. Thus the reorganization of farm systems in China may be attacked by those who regard property ownership as an absolute right or may be supported by those who favour more rational utilization of agricultural resources as well as manpower (like Prime Minister Nehru in his *Discovery of India,* p. 376).[88] Then different people may still hold divergent views on the specific manner in which organized farming is to be carried out, and at what speed. Take the question of the burden of the Chinese peasants as another example. Whether the emphasis is on the need for speedy economic development through a high rate of accumulation or on the rapid enhancement of the immediate consumption level of the rural people will lead to drastically different evaluations of the agrarian policy of China.

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[88] Mr. Nehru wrote in 1951 that 'The co-operative principle should be applied to the exploitation of land by developing collective and co-operative farms.'

While realizing the hazardous nature of opining on the prospects of Chinese agricultural development, the author will not refrain from doing so—partly for academic honesty and partly to invite comments on the observations, which lay no claim to infallability.

There are many prophets of doom for China's agriculture, particularly some American writers. Undoubtedly on the agrarian front in China today there exist difficulties, shortcomings, and growth pains—as brought out in the preceding sections of this paper. However, balancing favourable and unfavourable factors and considering the factual accomplishments up to date, it is the opinion of this writer that on the whole (without barring unexpected setbacks in store for a particular year) the future holds promise for Chinese agriculture. This conclusion is arrived at on the basis of considerations which may be summarily stated below: first, many long-range projects like conservation, afforestation, agro-technical improvements (particularly the chemical fertilizer industry) and the general economic expansion will begin to have an accumulative effect on the growth of the agricultural sector in China. With the over-fulfilment of the major targets of the First Plan, available evidence seems to indicate that economic development in China is proceeding from recovery and foundation-laying to the self-feeding process of accumulation-reinvestment-expansion-accumulation. Second, the agricultural programmes are co-ordinated with other planning fields (manufacturing industries, transportation, research), and with much more emphasis paid by Chinese planners now on investment allocations in agriculture and its related sectors (40.78 per cent more investment in 1958 than 1957, for example), it is reasonable to expect a surging forward of the rural economy. Third, the blueprint for an ambitious plan of agricultural development in China may still be upset by a succession of disastrous weather conditions. But as the water and soil conservation programmes are beginning to take effect and as three out of five years between 1953 and 1957 witnessed extensive natural calamities (1954, 1956 and 1957), the law of averages is on the side of the Chinese planners. And, the likelihood of a global conflagration is remote at present. Fourth, a series of reorganization measures and crises (land redistribution, Korean War, introduction of control of major agricultural products, natural disasters, and collectivization) are now passed without causing any serious disruption of the Chinese rural economy. With the basic transformation process accomplished, with much more capital and trained personnel funnelling into the rural areas, with practical experience accumulated, and with a comprehensive, co-ordinated development programme in full swing in all the major economic sectors, it is not unreasonable to forecast a steady development in the agricultural sector in the decade to come. Fifth, the agrarian policies and programmes of the Chinese Communist Party in the past have demonstrated a high degree of flexibility and realism. The capacity of making practical adjustments to meet changing conditions and eventualities constitutes a great asset. Sixth, in addition to the progress in the material sense, it is significant to keep in mind the 'qualitative' changes that are taking place in the Chinese villages. By 'qualitative' changes I mean such things as the re-location of students and excessive government employees in the rural areas of China (see p. 7) and the substitution of former superstitious beliefs with agro-scientific knowledge. Not the least important is the uprooting of the traditional fatalistic outlook, replaced by a hope in a better future through hard work and co-operative effort. Seventh, and last, is the effective organizational leadership, with the Chinese Communist Party as its nucleus, which for the first time in modern China has a nation-wide mass base and penetrates to the grass roots. This well-knit organizational apparatus reaches down to every village, mobilizing and indoctrinating various rural groups through a myriad of mass organizations such as the Youth League, the Women's Federation, and the co-operatives. As a matter of fact when one examines the causes for the speedy agricultural development that the Chinese Government is achieving in so short a time and by contrast, the former rural stagnation in modern China, one finds that it is the organizational leadership more than any other single factor that made the difference.

As a concluding remark, it may be said that the non-economic factors play just as important a role in the agricultural scene in China. The political changes paved the way for economic transformation of the rural economy, and the socio-cultural reforms reinforce the economic development. To comprehend fully the programme and problems of agriculture in present-day China it is essential to keep in mind the multi-purposeful and multi-functional nature of China's agricultural policies.

CAMBRIDGE, U.S.A.
15 *January* 1958

TABLE I

THE DEVELOPMENT OF ORGANIZED FARMING IN MAINLAND CHINA*

	1950	1951	1952	1953	1954	1955	1956
Mutual aid teams (in 1,000)	2,700	4,760	8,030	7,450	9,930	7,150	na
Households in the mutual aid teams (1,000) ..	11,313	21,000	45,364	45,637	68,478	60,389	na
Lower-stage APCs ..	19	300	3,640	15,000	114,000	633,000	216,000
Households in the APCs (1,000)	0.18	na	57	273	2,285	16,881	14,400
Higher-stage APCs (collective farms) ..	1	na	10	15	201	529	540,000
Households in the higher-stage APCs (1,000) ..	0.032	na	1.8	2.1	12	41	110,628
Membership in the supply and marketing co-ops. (in millions) ..	25	46	138	150	162	na	na
Credit co-operatives (1,000)	..	..	..	6.9 (June)	na	155	200 (est.)
Government farms (mechanized ones in parentheses)	1,215 (36)	na	2,336 (50)	2,376	2,415 (97)	2,242 (106)	.. (166)
Tractor stations ..	..	..	..	11	89	138 (9,862 tractors of 15 h.p.)	326 (20,000 tractors).
Total peasant households (1,000)	105,536	na	113,683	116,325	117,331	119,201	125,000

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*Data in this and other tables compiled from the First 5–Year Plan, 1955; State Statistical Bureau, Statistical Abstracts, *HPYK*, No. 17, 6 September 1956, pp. 39-50; Report of the Indian (Agricultural) Delegation to China, November 1956; *JMJP*, 22 and 24 February 1957, 2; Po I-po, *Report on National Planning* 1956 *and* 1957, 1 July 1957; Statistical Bureau, *Communique on the Implementation of the National Economic Plan in* 1956, 1 August 1957; and Li Fu-chun, *Report on the Implementation of the First 5-Year Plan and Future Tasks in Socialist Construction*, 7 December 1957, (*Ta-Kung Pao*), Hongkay, 8 December 1957.

TABLE II

FORMS OF ORGANIZED FARMING*

Type of organization	Ownership of land, draft animals and farm implements	Average No. of households and acreage of landholding	Type of work	Income distribution
Mutual aid teams (both seasonal and permanent)	Private	6 to 15 households; average landholding: no estimate	Farm operations	Each member gets the produce of his own plot, sometimes plus bonus for extra work
APCs	Private and co-operative	Households, 32; 92.5 acres; 13.1 draft animals (Dec. 1955)	Farm operations and some subsidiary occupations	Dividends from co-op. shares (including land dividend) and labour compensation. Av. income: 12,714 *yuan* per co-op. in 1955
Higher-stage APCs	Collective	Households, 116; 291 acres; 33.6 draft animals (Dec. 1955)	Farm operations, subsidiary occupations and large-scale agro-technical projects	Mainly compensation for labour, with little or no compensation for land Av. income: 89,728 *yuan* in 1955

*Figures taken from a report by the Statistical Bureau, 'Data on the APCs,' *HPYK*, no. 24 21 December 1956, pp. 63-65.

TABLE III—A

FOOD-CROP ACREAGE, PRODUCTION, AND PRODUCTIVITY IN CHINA*

	1949	1952	1953	1954	1955	1956	1957 (1st 5-Year Plan goal)	1957 (Est. on actual results)	1958 targets (1,000 acres or tons)
Rice									
Production	48,645	68,425	71,272	70,851	78,024	82,696.5	81,768	..	..
Acreage	63,499	70,104	69,953	70,943	72,057	82,549	73,259	..	..
Yield	1,688	2,147	2,241	2,197	2,382	2,204	2,454	..	..
Wheat									
P	13,808	18,123	18,281	23,332	22,965	24,854	23,725	..	..
A	53,145	61,207	63,321	66,608	66,045	67,494	65,920	..	..
Y	573	651	635	771	765	810	792	..	..
Potatoes									
P	9,843	16,326	16,653	16,981	18,897	21,851	21,300	..	..
A	17,319	21,459	22,270	24,159	24,833	27,191	24,287	..	..
Y	4,941	6,695	6,580	6,184	6,696	6,988	7,733	..	..
Other Grains									
P	35,799	51,519	50,695	49,269	54,926	53,341	54,800	..	..
A	117,090	124,612	126,716	125,651	129,505	129,970	120,624	..	..
Y	672.6	910	880	863	933	903	1,000	..	..
Total grain production	108,100	154,400	156,900	160,430	174,870	182,500	181,590	185,000	196,000
Soya beans									
P	5,086	9,519	9,931	9,080	9,121	10,223	11,220	10,700 (?)	..
A	20,548	28,847	30,534	31,255	28,262	29,795	31,328	..	..
Y	545	726	716	639	710	755	788	..	..

TABLE III—B

FOOD-CROP ACREAGE, PRODUCTION, AND PRODUCTIVITY IN CHINA* (*Contd.*)

	1949	1952	1953	1954	1955	1956	1957 (1st 5-Year Plan goal)	1957 (Est. on actual results)	1958 targets 1,000 acres or tons
Total food crop area	251,053	277,388	292,260	287,361	292,440	307,204	284,090	..	306,500
Soya bean area	20,548	28,847	30,534	31,255	28,262	29,795	31,328	..	..
Industrial crops acreage	..	24,216	22,558	24,322	27,333	24,582	..	..	
Other crops	..	18,522	10,599	22,436	25,365	31,710	..	..	
Total crop acreage ..	..	348,972	355,951	365,374	373,400	393,291	375,242	..	420,463
Total cultivated area	241,766	266,560	268,067	270,107	272,085	276,156	273,500	280,000	282,000
Paddy fields	56,360	63,857	64,109	64,882	65,554	na	..	..	100,000
Dry fields ..	185,381	202,703	203,958	205,225	206,532	na	..	..	..
Watered fields ..	7,976	12,078	12,397	13,150	13,625	na	..	..	..
Multiple crop area ..	..	100%	101.4%	103.5%	104.8%	108.7%	..	..	..

*Units: acreage, 1,000; production, 1,000 metric tons; yield, lbs. per acre; Production of potatoes is calculated at the rate of four tons of potatoes to one ton of grain. One *mou* is equal to 0.1647 acre; One hectare, 2.47 acres; and one metric ton, 2,200 pounds. Data compiled from sources listed under Table I.

TABLE IV

PRODUCTION, ACREAGE, AND PRODUCTIVITY OF INDUSTRIAL CROPS*

	1949	1952	1953	1954	1955	1956	1957 (1st 5-Year Plan goal)	1957 (Est. on actual results)	1958 targets 1,000 acres or tons
Cotton									
Production	444	1,304	1,175	1,065	1,518	1,443	1,635	1,640	1,750
Acreage ..	6,842	13,773	12,795	13,491	14,259	15.463	15,646	..	..
Yield ..	143	208	202	174	234	204	222	240 (?)	..
Jute and Kenaf									
P ..	37	305	138	137	257	259	365	300	..
A ..	69.2	390	195	178	287	335	342	..	..
Y ..	1,176	1,721	1,557	1,693	1,970	1,706	2,350	..	..
Cured tobacco									
P ..	43	222	213	232	298	399	390	395	..
A ..	150.7	459	472	538	622	954	689	..	..
Y ..	628	1,064	993	949	1,054	923	1,253	..	..
Sugarcane									
P ..	2,642	7,116	7,209	8,592	8,110	8,666	13,180	13,119	13,017(?)
A ..	266.8	449.5	474	541	504	544	666	..	..
Y ..	21,786	34,838	33,459	34,940	35,401	34,860	43,535	..	..
Sugar beets									
P ..	191	479	505	989	1,598	1,650	2,135	1,700	2,389(?)
A ..	3.95	86	121	180	284	371	348	..	..
Y ..	10,638	12,253	9,182	12,088	12,379	9,787	13,515	..	..

TABLE IV (*Contd.*)

Peanuts								
P ..	1,268	2,316	2,127	2,767	2,926	3,335	na	na	..
A ..	3,097	4,456	4,584	5,180	5,602	6,380	na	..	..
Y ..	901	1,143	1,067	1,175	1,149	1,153	na	..	..
Rapeseed									
P ..	734	932	879	878	969	925	na	na	..
A ..	3,742	4,602	4,117	4,214	5,775	535	na	..	..
Y ..	432	446	470	458	369	380	na	..	..

*Units: Production, 1,000 metric tons; acreage, 1,000; yield, lbs. per acre. Data compiled from sources listed under Table I.

TABLE V

PRODUCTION OF MAJOR SUBSIDIARY PRODUCTS IN RURAL CHINA*

(*in* 1,000 *metric tons*)

	1949	1952	1953	1954	1955	1956	1957 (1st 5-Year Plan goal)	1957 (Est. on actual results)
Tea ..	41.1	82.4	84.7	92.1	108.0	120.5	111.9	115(?)
Domestic cocoons ..	30.9	62.2	59.3	65.1	67.0	72.5	93.4	70(?)
Wild cocoons	11.9	61.1	12.3	25.7	63.8	61.8	62.7	..
Marine products ..	447.9	1,663.3	1,899.7	2,293.5	2,517.9	2,640	2,802.6	na

*Data from 'Statistical abstracts of the national economy' (June 1956), *HPYK*, No. 17:44 (6 September 1956), and *The First Five Year Plan*, 81 and 89. Production of wild cocoons, mainly in the Liaoning province, dropped sharply in 1953 and 1954 because of natural calamities.

TABLE VI

DEVELOPMENT IN LIVESTOCK RAISING IN MAINLAND CHINA**

(*in* 1,000 *head*)

	1949	1952	1953	1954	1955	1956	1957 (1st 5-Year Plan goal)	1957 (Est. on actual results)
Horses ..	4,875	6,130	6,512	6,939	7,312	7,385	8,340	..
Cattle and Buffaloes	43,939	56,600	60,083	65,623	65,951	66,611	73,610	..
Mules ..	1,471	1,637	1,645	1,717	1,723	1,706	1,970	..
Donkeys ..	9,494	11,806	12,215	12,700	12,402	11,658	13,950	..
Sheep and Goats ..	42,347	61,779	72,023	81,304	84,218	92,150	113,040	..
Hogs ..	57,752	89,765	96,131	101,718	87,920	97,800 (Dec.)	125,000	120,000
Total ..	159,875	227,717	248,609	268,001	259,526	277,290	335,910	..

**Data compiled from sources listed under Table I.

TABLE VII

FISCAL AND FINANCIAL PROGRAMMES IN AGRICULTURE IN MAINLAND CHINA*

	1949/50	1950/1	1951/2	1952/3	1953/4	1954/5	1955/6	1956/7	1957/8
	(In million metric tons, if not otherwise indicated)								(Est.)
Total grain production, unprocessed grain. (Not including soya beans) ..	108.1 (1949)	124.7 (1950)	135.1 (1951)	154.4 (1952)	156.9 (1953)	160.43 (1954)	174.87 (1955)	182.5 (1956)	185 (1957)
Amount of public grain collected as tax (in terms of 'fine grain' which contains some dehusked grain) ..	20.30	17.67	21.87	19.4	17.55	19	19	18.4	..
Tax grain in terms of unprocessed grain as in 1. (The average depreciation rate from 1 to 2 is about 10.3%) ..	21.62	18.60	22.98	20.38	19.02	20.76	20.18	19.53	..
Grain purchased by state (unprocessed)	..	7.241	14.482	25.511	30.73	30.72	26.97	20.08	..
Total of 3 & 5	..	25.84	37.46	45.89	49.75	51.48	47.15	39.61	..
Value of agri. tax (in billion *yuan*. One *yuan* equals U.S.$ 0.4246)	..	1.890	2.168	2.601	2.905	3.277	3.05	2.965	2.94
Percentage of agri. tax in national budget receipts ..	..	29.63%	18.17%	17.08%	13.48%	12.4%	11.22%	10.17%	11%
Grain exported (soya beans)		(1950-2: 4.5 million tons)			.95 (.65)	.80 (.95)	1.0 (.5)	1.32 (?)	0.78 (?)
Grain Imported	..	..	none	none	none	0.40 (rice)	na	na	na
Rural credit extended to peasants (million U.S. $).**	..	85	170	454	535	357	425	1,400	1,656 (including returned credit: 1,274)
State investment in agriculture, conservation, irrigation, forestry, and meteorology services (mill. U.S. $) ..	..	..	..	..	499.7	583.8	628	969.8	866.2

(Planned investment (mill. U. S. $) 1953-57: 1,414.8)

*Data compiled from sources listed in Table I; Li Hsien-nien, 1956 *Budget Report*; *First Five-Year Plan*; and U.N. Economic Commission for Asia and the Far East, *Economic Survey of Asia and the Far East*, 1955 (Bangkok: 1956), 80-99.

**The dollar equivalent does not accurately reflect the purchasing value of the Chinese currency which is often higher for non-imported goods.

TABLE VIII

AGRO-TECHNICAL DEVELOPMENT IN MAINLAND CHINA, 1950-56*

	1950	1951	1952	1953	1954	1955	1956	1957 (goal)	1957 (Est. on actual results)	1958 targets (1,000 acres or tons)
		(In 1,000 acres, if not otherwise indicated)								
Acreage newly reclaimed ..	1949-52:	..	280	1,525	2,061	2,165	4,833	..	..	3,000
Acreage newly afforested ..	290	1,040	2,000	2,780	2,900	4,260	8,333	7,500	..	10,800
Acreage newly irrigated ..	1,133	2,000	4,250	1,630	1,950	3,170	16,666	8,300(?)	..	..
Area sown with improved seeds, Cotton, Wheat and rice, Food-grains ..	19%	28.8%	51% 10%	na na	na na	70% na	90% na 56%	..	80% na 40%	.. .. ..
New Farm tools distributed (1,000 pieces)	..	12	30	570	400	530	1,070 (wheel plows)	1,600 (all types)	..	..
Chemical fertilizer distributed (1,000 tons) (excluding soya bean cakes in brackets) ..	160	220	300	600 (3,000)	820 (3,200)	1,030 (3,500)	1,620 (4,000)	..	..	3,200?
Total capacity of power pumps distributed (1,000 h. p.) ..	..	..	..	..	137	227	390 (Sept.)	200	..	1,000 (one million h. p.)
Total no. agro-technical stations (1,000)	..	..	..	..	4	8.5	16	..	..	..
Pest-observation posts (1,000) ..	..	..	..	..	..	..	4,000	..	..	..
No. of peasants received agro-technical training (1,000)	..	..	..	..	..	..	4,000	..	..	..
Insecticides distributed (1000 tons)	..	..	..	..	..	90	159	..	..	..
Total cultivated acreage (1,000) ..	247,930	256,120	266,560	268,067	270,107	272,085	276,156	..	..	..
Total crop acreage (1,000)	na	na	348,972	355,951	365,374	373,400	393,291	..	..	..

*Data compiled from sources listed under Table I,

TABLE IX

MAJOR FEATURES OF THE CURRENT (1953-7) AGRICULTURAL TAX SYSTEM IN MAINLAND CHINA*

Area[1]	Tax Rates	Exemption Base
East China (except Shantung provinces), Central-South China and Southwest China: 13 provinces	Progressive rates[2] from 7% for a per capita income of 165—220 lbs. of grain (paddy) to 30% for a per capita income of 2,145 lbs. or more of grain. Total tax classes: 24	165 lbs. of local staple grain (paddy) per person
Northwest China (Shensi, Kansu, Tsinghai provinces, excluding old liberated areas)	Progressive rates from 5% for a per capita income of 165—209 lbs. of grain (wheat) to 30% for 1,859 lbs. or more of grain. Total tax classes: 26	165 lbs. of local staple grain (wheat) per person
Northeast China (Kirin and Heilungkiang provinces, Liaoning province; and 5 municipalities)	Proportional tax 23% of agricultural income 21%	No exemption base
North China (Hopei and Shansi provinces)	Proportional tax 22%	110 lbs. of grain (unhusked millet) per person
Northwest China (former Shensi-Kansu-Ningbsia border region)	Proportional tax: 18 to 20%	165 lbs. of grain (wheat) per person
Shantung province and Inner Mongolia	Proportional tax: rates unknown	165 lbs. of grain per person
1956 maximum rate for local surtaxes for all areas: 22% of regular tax.		
Tibet, Sinkiang, and minority areas	Rates to be determined separately.	

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*Data compiled from GAC, *Directives on Agricultural Tax* (1951, 1952, 1953 and 1954), and Li Hsien-nien, 'Report on the 1955 final account and the 1956 national budget,' *HPYK*, no. 14:1-9 (21 July 1956).

[1] Six regional administrative divisions were abolished in 1954. Regional names are used here to indicate the general area.

[2] These rates are not truly progressive as they are applicable to the entire agricultural output instead of the excess in total output which falls within a lower tax bracket.

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